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(71) Applicant (for all designated States except US): ATMOSPHERIC SENSORS, LLC [US/US]; 416 East Church Road, King of Prussia, PA 19406-1533 (US).

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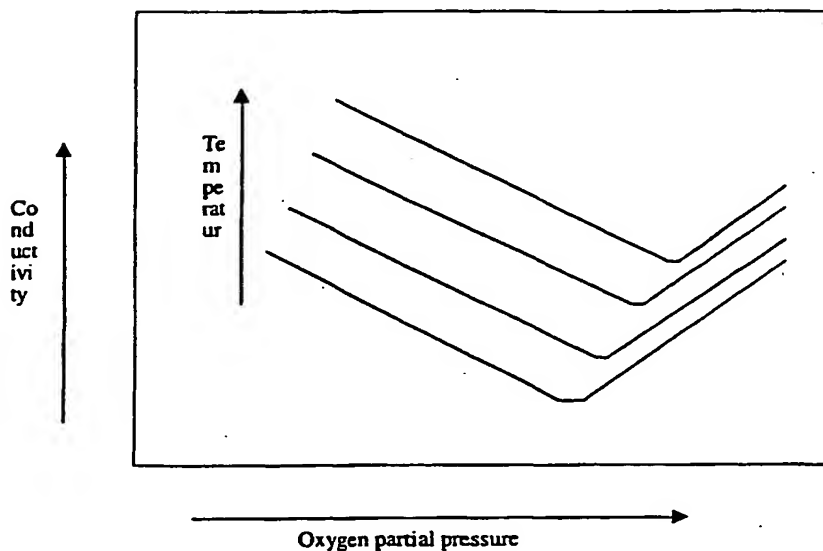
(72) Inventor; and  
(75) Inventor/Applicant (for US only): MOSELEY, Patrick, T. [US/US]; 100 Ellsworth Place, Chapel Hill, NC 27516 (US).  
(74) Agents: WRAY, James, C. et al.; 1493 Chain Bridge Road, Suite 300, McLean, VA 22101 (US).

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(54) Title: EXHAUST GAS OXYGEN SENSOR



(57) Abstract: The present invention identifies a formulation for a subgroup of perovskite structure oxides that overcomes the outstanding problems for oxygen sensing in a combustion environment. The sub group has a formula  $ABO_x$  where A is a large 3-valent ion, such as  $Pr^{3+}$ , B is a transition metal ion, which is substituted to a small degree by tungsten (which has a stable valence of 6), and x indicates that the oxide can sustain a variable oxygen stoichiometry. A preferred general formulation is a single-phase perovskite structure  $AB_{1-y}W_yO_x$  where y preferably lies between 0.03 and 0.15, more preferably between 0.05 and 0.10 and where x is close to 3. Preferred examples of compositions that can achieve these advantages include, but are not limited to,  $PrFe_{0.95}W_{0.05}O_x$ , and  $LaFe_{0.95}W_{0.05}O_x$ .

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